UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

AUG 11 2015

Kristi Young, Acting Field Supervisor
Pacific Islands Fish and Wildlife Office
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96950

Subject: Draft Environmental Impact Statement for the Na Pua Makani Wind Project and Habitat Conservation Plan, Kahuku, Hawaii [CEQ# 20150160]

Dear Ms. Young:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Na Pua Makani Wind Project and Habitat Conservation Plan. Our review and comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The EPA supports the development of renewable energy resources in an expeditious and well-planned manner. Accelerating the development of renewable resources and the deployment of clean energy technologies in Hawaii will help the state meet its energy demand, reduce dependence on imported oil, create new jobs, and provide for increased energy security, while reducing greenhouse gas emissions. The proposed incidental take permit represents a coordinated approach to protecting and preserving the eight proposed Covered Species and their habitat, while allowing the proposed wind energy project to proceed. We encourage the U.S. Fish and Wildlife Service to apply its regulatory authorities in a manner that will promote a long-term sustainable balance between the development of renewable energy resources and the protection of ecosystems and human health.

Wind power development offers many benefits to society and the environment; however, there can be burdens associated with living in close proximity to wind turbines. The community in the vicinity of the proposed project has been identified as a minority environmental justice population, due to the disproportionate concentration of Native Hawaiians and other Pacific Islanders, and may be less equipped than other communities to deal with those burdens.

Based on our review of the DEIS, we have rated the proposed Project and the document *as Environmental Concerns – Insufficient Information* (EC-2). Please see enclosed *Summary of EPA Rating Definitions*. We have concerns regarding potential impacts to aquatic resources. We are also concerned about the proximity of the proposed turbines to residents in Kahuku. We recognize that the Proponent has increased the setbacks beyond what is required by Hawaii regulations. Nonetheless, we remain concerned about the potential impacts of noise and shadow flicker from the proposed Project on residents. Our detailed comments provide recommendations regarding these and other concerns.

We appreciate the opportunity to review this DEIS, and are available to discuss our comments. When the Final EIS is released for public review, please send one hard copy and one CD-ROM to the address above (Mail Code: ENF-4-2). If you have any questions, please contact me at 415-972-3521, or contact Ann McPherson, the lead reviewer for this project. Ann can be reached at 415-972-3545 or mcpherson.ann@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosures: Summary of the EPA Rating System
EPA's Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NA PUA MAKANI WIND PROJECT AND HABITAT CONSERVATION PLAN, KAHUKU, HAWAII, AUGUST 11, 2015

Water Resources

According to the Draft Environmental Impact Statement, three streams run through the proposed site and, based on a preliminary delineation, may qualify as jurisdictional waters of the United States (WUS) (pg. 4-21). Although project components are not expected to directly impact the perennial Malaekahana stream, they could impact the intermittent Kea'aulu and Ohia streams (pg. 4-21); however, the DEIS does not quantify the potential impacts to these aquatic resources. While indicating that the project footprint has been designed to avoid jurisdictional features where possible, the document acknowledges that it is not known whether the project would require placement of dredged or fill material temporarily or permanently below the delineated ordinary high water marks (App. I, pg. 20).

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers has authority to regulate the discharge of dredged and fill material into WUS. If a Section 404 permit is required, the U.S. Environmental Protection Agency will review the project for compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). Pursuant to the Guidelines, any permitted discharge into WUS must be the Least Environmentally Damaging Practicable Alternative (LEDPA) available to achieve the project purpose. No discharge can be permitted if it will cause or contribute to significant degradation of WUS. If impacts to aquatic resources cannot be avoided, alternatives that minimize impacts must be fully considered. Opportunities may exist to avoid and minimize impacts to waters through sensitive siting criteria, such as the placement of wind turbines out of waters, or by bridging or use of at-grade crossings.

Recommendations:

Consult with the Corps of Engineers to determine whether the proposed project would require a Clean Water Act Section 404 permit. Include, in the Final EIS, the jurisdictional delineation by the Corps and disclose whether the project would require a Section 404 permit.

Quantify and describe, in the FEIS, any direct, indirect/secondary, or temporary impacts to jurisdictional waters. Include a mitigation plan for unavoidable impacts to jurisdictional waters, and evaluate the project alternatives with regard to compliance with the 404(b)(1) Guidelines and authorization of the LEDPA, if applicable.

Characterize the functions of any aquatic features that could be affected by the project that are determined not to constitute jurisdictional waters, and identify measures that would mitigate impacts to such waters.

Setbacks for Wind Turbine Generators

The DEIS states that project wind turbines would be set back a minimum of 1,500 feet from the nearest residential areas (pg. 4-233). Elsewhere, the DEIS states that the nearest residence is located 673 feet from a proposed turbine (pg. 4-45).

Recommendation:
Clarify in the FEIS, what the actual minimum setback would be for the proposed project. Include a map that shows the locations of the proposed wind turbines and the residences nearest to them. Disclose the distances between those turbines and residences.

Noise

Baseline Sound Levels
Appendix D of the DEIS indicates that projected noise levels during project construction and operation were assessed using baseline sound data collected in April/May 2014 and acoustic modeling. Baseline sound data were collected at integer wind speeds where the Project would operate (10 to 39 feet/second) (pg. 3-26). According to the DEIS, the wind turbines under consideration reach their highest operational sound levels at approximately 23 f/s. During this wind speed condition, existing sound levels for the acoustic analysis area were found to range from 45 to 49 dBA Leq (daytime) and 43 to 48 dBA Leq (night) (pg. 3-28). The DEIS does not specify whether the existing Kahuku wind farm, situated north of the proposed project, was operating at all times when baseline sound data were collected, and if so, how many turbines were in operation. In order to determine the cumulative impacts on noise levels that would result from construction and operation of the proposed wind farm, it is important to know whether or not the baseline sound levels account for the maximum impact of the existing Kahuku facility.

Recommendation:
Clarify how many, if any, wind turbines from the Kahuku wind farm were operating when the baseline sound data were collected.

Hawaii Noise Regulations
Hawaii regulates noise through the Hawaii Administrative Rule (HAR 11-46), which provides daytime and nighttime maximum permissible noise limits[1] according to zoning districts (pg. 4-39). According to the DEIS, the analysis indicates compliance with HAR 11-46, although there would be some small increases in sound levels. In class A zones, most increases would be minimal (up to 4 dBA); however, some residences in Class C zones are predicted to experience increases in excess of 5 dBA (pg. 4-45). The DEIS does not discuss the potential margin of error associated with these values. It concludes that residents at these homes would realize little to no noise impact from the turbines when inside and with windows closed; therefore, noise impacts such as sleep disturbance are not anticipated, and no mitigation is identified (pg. 4-46). EPA believes that it is reasonable to assume that many area residents are accustomed to sleeping with windows open, given that electricity costs in Hawaii are relatively high and not every household has air conditioning; therefore, the impacts may be greater than anticipated in the DEIS.

Recommendations:
Disclose the number and locations of residences that would experience noise increases up to 4dBA, between 4dBA and 5dBA, and in excess of 5 dBA.

[1] HAR 11-46 Noise Limits - (Zone A – 45 dBA night and 55 dBA day; Zone B – 50 dBA night and 60 dBA day; Zone C – 70 dBA day or night).

Evaluate predicted and actual noise impacts inside affected homes with windows open. Utilize A-weighted (dBA) and C-weighted (dBC) scales to ensure that potential impacts from low frequency noise are evaluated.

Identify, in the FEIS, measures that could mitigate impacts associated with wind turbine noise.

Seek a commitment from the Proponent to monitor post-construction noise in the acoustic analysis area and document this commitment in the Record of Decision. We recommend that, at minimum, such monitoring be conducted at the locations of sensitive receptors.

In addition, we recommend that the Proponent implement a noise complaint resolution process that would document, investigate, evaluate, and resolve any project-related noise complaints.

World Health Organization Noise Guidelines

As noted in DEIS Appendix D, EPA published a document in 1974 that identifies noise levels affecting health and welfare. The noise impact assessment states that this EPA report represents the only published study that includes a large database of community reaction to noise to which a proposed project can be readily compared. More recently, the World Health Organization published two guidelines that can be used to assist in providing a framework for assessing noise impacts. The *WHO Night Noise Guidelines for Europe*[2], published in 2009, recommend 40 dBA levels or lower at night time to prevent adverse health impacts, with an interim target of 55 dBA. The *WHO Guidelines for Community Noise*[3], published in 1999, recommend sound levels less than 30 dBA in bedrooms at night for good quality sleep, and less than 35 dBA in classrooms to allow good teaching and learning conditions. The WHO advises that, when the noise is composed of a large proportion of low-frequency sounds, still lower guideline values should be applied; also that outside noise levels should be low enough to allow people to sleep with their bedroom windows open. The baseline nighttime sound levels reported in the DEIS exceed the WHO Night Noise Guidelines.

Recommendation:

Discuss, in the FEIS, the WHO noise guidelines and potential impacts to health associated with outdoor nighttime noise levels in exceedance of 40 dBA, indoor nighttime levels in exceedance of 30 dBA in bedrooms, and indoor daytime levels in exceedance of 35 dBA in classrooms.

Shadow Flicker

According to the DEIS, 98 percent of receptors will experience less than 30 hours/year of shadow flicker, which is an unofficial industry standard. Seventeen of 737 receptors modeled, however, had expected shadow flicker impacts of more than 30 hours per year, ranging up to 204 hours and 2 minutes per year at an occupied residence (pg. 4-234). The DEIS concludes that there would be minimal impacts outside of the wind farm boundary (pg. 4-235), and notes that strategic vegetative screening and/or installation of curtains and blinds on windows are effective and economically viable mitigation options (Appendix K, pg. 9).

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[2] See http://www.euro.who.int/__data/assets/pdf_file/0017/43316/E92845.pdf?ua=1 (See pg. VI).

[3] The WHO Guidelines for Community Noise can be downloaded as a pdf from the following website: http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications (See pgs. 46 and 57).

Recommendations:
Specify, in the FEIS, the types and locations of receptors who are likely to be affected by greater than 30 hours of shadow flicker per year.

Since curtains and blinds only mitigate shadow flicker if the receptor is indoors with the curtains and blinds closed, discuss, in the FEIS, how shadow flicker could be mitigated in the event that that the receptor is outdoors or is unable or unwilling to remain behind blinds and curtains for the duration of the shadow flickering.

Describe where vegetative screening would need to be located in order to be effective, and the species of vegetation that would be used for that purpose. EPA strongly recommends the use of native species to avoid introducing or furthering the spread of invasive non-native species. Clarify who would be responsible for any necessary maintenance of vegetative screens that are established as mitigation.

Discuss the feasibility of stopping a particular wind turbine(s) whenever shadow flicker would constitute a nuisance, particularly for the 17 receptors who would experience more than 30 hours of shadow flicker per year.

Community Benefits Package

The DEIS states that the Proponent is conducting outreach efforts to define a Community Benefits Package, which may include honoring the commitment of the prior developer to pay $10,000 per wind turbine per year over the life of the project to the Kahuku community, or about $2,000,000 of direct economic benefits (pg. 4-126). Further information about the use of such funds is not provided.

Recommendation:
Discuss, in the FEIS, how the Community Benefits Package funds may be utilized. Describe the process that would be used to decide how such funds would be appropriated.

Project Decommissioning

The life of the proposed project is expected to be 21 years, after which the Proponent would evaluate whether to continue operation of the project or to decommission it. The facility may also be upgraded and repowered with renegotiated leases. According to the DEIS, if the project is decommissioned, the goal would be to remove the power generation equipment and return the site to a condition as close as possible to its pre-construction state (pg. 2-25).

Recommendation:
Identify, in the FEIS, bonding or financial assurance strategies for decommissioning and reclamation. Use the projected 21-year lifespan to ascertain the appropriate financial instruments that could be used for bond and/or financial assurance calculations.